

HMR2053sqlt.txt SEQUENCE LISTING

```
<110>
       AVENTIS PHARMACEUTICALS INC.
       GUO, Yong
       MORSE, Clarence C
       YAO, Zhengbin
<120>
       MEMBRANE PENETRATING PEPTIDES AND USES THEREOF
<130>
       HMR2053 PCT
<140>
       PCT/US 01/26421
<141>
       2001-08-23
<150>
       US 60/227,647
<151>
       2000-08-25
<150>
       GB 0103110.3
<151>
       2001-02-07
<160>
       54
<170>
       PatentIn version 3.2
<210>
       1
<211>
       10
<212>
       PRT
<213>
       Artificial Sequence
<220>
<223>
       Sequence of nuclear location sequence contained within the
       N-terminal of IL-alpha propiece.
<400>
       1
Asn Gly Lys Val Leu Lys Lys Arg Arg Leu
<210>
       2
<211>
       16
<212>
       PRT
<213>
      Artificial Sequence
<220>
<223>
       Signal sequence peptide from Antennapedia homeodomain
<400>
      2
Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys
<210>
       15
<211>
<212>
       PRT
<213>
       Artificial Sequence
<220>
<223>
       Fibroblast growth factor signal sequence peptide
<400>
       3
```

```
HMR2053sqlt.txt
 Ala Ala Val Ala Leu Leu Pro Ala Val Leu Leu Ala Leu Leu Ala
  <210>
<211> 29
<212> PRT
  <213> Artificial Sequence
  <223>
         HIV tat signal sequence peptide
  <400>
 Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly Arg Lys Lys Arg 1 10 15
 Arg Gln Arg Arg Pro Pro Gln Gly Ser Gln Thr His
  <210>
  <211>
        4
  <212> PRT
<213> Artificial Sequence
  <220>
         Peptide sequence of an N-terminal fluorescein isothiocyanate
  <223>
         (FITC) peptide motif
 <400>
 Gly Gly Gly Gly
  <210>
         6
  <211>
<212>
        PRT
  <213>
       Artificial Sequence
  <220>
  <223>
        Fragment of IFN-gamma
  <400>
       6
 Arg Lys Arg Lys Arg Ser Arg
1 5
  <210>
  <211>
  <212>
        PRT
  <213>
        Artificial Sequence
 <220>
  <223>
         Fragment of the N-terminus of fibroblast growth factor.
  <400> 7
 Asn Tyr Lys Lys Pro Lys Leu
1 5
```

```
<210>
  <211>
        8
  <212> PRT
. <213> Artificial Sequence
  <220>
        Luinus luteus nuclear protein import sequence
  <223>
  <400>
  Lys Pro Lys Lys Lys Glu Lys
1
  <210>
         5
  <211>
  <212> PRT
  <213> Artificial Sequence
  <220>
         Sequence of the basic motif in the nuclear protein import
  <223>
         sequence of Smad 3 protein
  <400>
  Lys Lys Leu Lys Lys
  <210>
       10
  <211> 11
  <212> PRT
  <213> Artificial Sequence
  <220>
         Sequence of intracellular loop of 5HT2A receptor
  <223>
  <400>
         10
  Ser Leu Glu Lys Lys Leu Gln Asn Ala Thr Asn 1 10
  <210> 11
<211> 23
  <212> PRT
  <213>
       Artificial Sequence
  <220>
         Sequence of C-terminal transmembrane 7 domain derived from 5HT2A
         receptor
  <400> 11
  Lys Thr Tyr Arg Ser Ala Phe Ser Arg Tyr Ile Gln Tyr Lys Glu Asn 1 10 15
  Lys Lys Pro Leu Gln Leu Ile
```

```
<210> 12
<211> 9
  <212> PRT
<213> Artificial Sequence
  <220>
  <223>
        Fragment of HIV TAT
  <400> 12
 <210> 13
  <211> 4
  <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Synthetic peptide
 <400> 13
 Gly Phe Leu Gly
 <210> 14
 <211> 5
<212> PRT
 <213> Artificial Sequence
 <220>
 <223> Synthetic peptide
 <400> 14
Asp Asp Asp Lys 5
<210> 15
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> synthetic peptide
<400> 15
Glu Tyr Phe Pro
<210> 16
<211> 16
<212> PRT
<213> Artificial Sequence
<220>
```

```
HMR2053sqlt.txt
    <223> Nuclear protein import sequence of hPER1
<400>
    Ser Arg Arg His His Cys Arg Ser Lys Ala Lys Arg Ser Arg His His 10 15
    <210>
    <211> 16
<212> PRT
   <213> Artificial Sequence
   <220>
   <223>
          Synthetic Peptide
   <400>
   Gly Arg Arg His His Cys Arg Ser Lys Ala Lys Arg Ser Arg His His 10 \hspace{1cm} 15
   <210>
          18
   <211>
         23
   <212> PRT
   <213> Artificial Sequence
   <220>
   <223> Synthetic peptide
   <400> 18
  Gly Met Asp Tyr Lys Asp Asp Asp Lys Gly Tyr Gly Arg Lys Lys
1 10 15
  Lys Arg Arg Gln Arg Arg Arg
  <210> 19
  <211> 23
  <212> PRT
  <213> Artificial Sequence
  <220>
  <223> Synthetic peptide
  <400> 19
  Gly Met Asp Tyr Lys Asp Asp Asp Lys Gly Tyr Gly Arg Lys Lys
1 10 15
 Lys Arg Arg Gln Arg Arg Arg
  <210> 20
  <211> 19
 <212> PRT
 <213> Artificial Sequence
```

```
HMR2053sqlt.txt
    <220>
   <223>
            Synthetic peptide
    <400>
Gly Met Asp Tyr Lys Asp Asp Asp Asp Lys Gly Met Asp Tyr Asp Asp 1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15
    Asp Asp Lys
    <210> 21
<211> 17
    <212> PRT
    <213> Artificial Sequence
    <220>
    <223>
           Synthetic peptide
    <400> 21
   Gly Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys 10 \hspace{1cm} 15
   Lys
   <210> 22
<211> 10
   <212> PRT
   <213> Artificial Sequence
   <220>
   <223> Synthetic peptide
   <400> 22
   Gly Arg Arg Arg Arg Arg Arg Arg 1 10
  <210> 23
<211> 10
<212> PRT
<213> Artificial Sequence
  <220>
<223> Synthetic peptide
   <400> 23
  Gly Lys Lys Lys Lys Lys Lys Lys Lys 1 5 10
```

Page 6

<210> 24 <211> 10 <212> PRT <213> Artificial Sequence

```
<220>
         Synthetic peptide
<223>
<400> 24
Gly His His His His His His His His
<210> 25
<211> 9
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 25
Gly Asp Pro Lys Lys Lys Arg Lys Val
<210> 26
<211> 19
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 26
Gly Lys Lys Thr Gly Lys Asn Arg Lys Leu Lys Ser Lys Arg Val Lys 1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15
Pro Arg Asp
<210> 27
<211> 12
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 27
Gly Arg Lys Gly Lys His Lys Arg Lys Leu Pro 1 5 10
<210> 28
<211> 18
<212> PRT
<213> Artificial Sequence
<223> Synthetic peptide
```

Page 7

```
<400> 28
Gly Lys Arg Val Ala Lys Arg Lys Leu Ile Glu Gln Asn Arg Glu Arg 1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15
Arg Arg
<210> 29
<211> 18
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 29
Gly Arg Lys Leu Lys Lys Lys Lys Asn Glu Lys Glu Asp Lys Arg Pro 1 \hspace{1cm} 10 \hspace{1cm} 15
Arg Thr
<210> 30
<211> 17
<212> PRT
<213> Artificial Sequence
<220>
<223> synthetic peptide
<400> 30
Gly Lys Lys Thr Asn Leu Phe Ser Ala Leu Ile Lys Lys Lys Thr 10 \ 15
Ala
<210> 31
<211> 18
<212> PRT
<213> Artificial Sequence
<220>
<223>
         Synthetic peptide
<400>
Gly Arg Arg Glu Arg Asn Lys Met Ala Ala Ala Lys Cys Arg Asn Arg 1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15
```

Arg Arg

```
<210>
          32
  <211> 18
  <212> PRT
. <213> Artificial Sequence
  <220>
  <223> Synthetic peptide
  <400> 32
  Gly Lys Arg Ala Arg Asn Thr Glu Ala Ala Arg Arg Ser Arg Ala Arg 1 5 10 15
  Lys Leu
  <210> 33
<211> 14
<212> PRT
  <213> Artificial Sequence
  <220>
  <223> Synthetic peptide
  <400> 33
  Gly Arg Arg Arg Ala Thr Ala Lys Tyr Arg Thr Ala His 1 10
  <210> 34
  <211> 15
  <212> PRT
  <213> Artificial Sequence
  <220>
  <223> Synthetic peptide
  <400> 34
  Gly Lys Arg Arg Arg Arg Ala Thr Ala Lys Tyr Arg Ser Ala His
1 5 10 15
  <210> 35
<211> 12
<212> PRT
  <213> Artificial Sequence
  <223>
         Synthetic peptide
  <400> 35
  Gly Arg Arg Arg Lys Arg Leu Ser His Arg Thr 1 \hspace{1cm} 5 \hspace{1cm} 10
  <210> 36
```

```
HMR2053sqlt.txt
  <213> Artificial Sequence
<223> Synthetic peptide
  Gly Arg Arg Arg Arg Glu Arg Asn Lys
1 5 10
  <213> Artificial Sequence
          Synthetic peptide
  Gly Lys His Arg His Glu Arg Gly His His Arg Asp Arg Arg Glu Arg
1 10 15
  <210> 38
<211> 17
<212> PRT
<213> Artificial Sequence
  <223> Synthetic peptide
  Gly Lys Lys Arg Lys Leu Ser Asn Arg Glu Ser Ala Lys Arg Ser 10 15
```

```
<211> 16
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 39
Ser Arg Arg His His Cys Arg Ser Lys Ala Lys Arg Ser Arg His His 1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15
<210> 40
<211> 16
```

<212> PRT <213> Artificial Sequence

•

<220>

<211> 10 <212> PRT

<400> 36

<210> 37 <211> 16 <212> PRT

<220>

<220>

Arg

<400> 38

<210> 39

<223> <400>

```
<220>
<223>
      Synthetic peptide
<400>
      40
Ser Ala Arg His His Cys Arg Ser Lys Ala Lys Arg Ser Arg His His
<210>
      41
<211>
      16
<212>
      PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 41
Ser Arg Ala His His Cys Arg Ser Lys Ala Lys Arg Ser Arg His His
<210>
      42
<211>
      16
<212> PRT
<213> Artificial Sequence
<220>
<223>
      Synthetic peptide
<400> 42
Ser Arg Arg Ala His Cys Arg Ser Lys Ala Lys Arg Ser Arg His His
<210>
      43
<211>
      16
<212>
      PRT
<213> Artificial Sequence
<220>
     Synthetic peptide
<223>
<400>
Ser Arg Arg His Ala Cys Arg Ser Lys Ala Lys Arg Ser Arg His His
<210>
      44
<211>
      16
<212>
      PRT
<213>
      Artificial Sequence
<220>
<223>
      Synthetic peptide
<400>
Ser Arg Arg His His Ala Arg Ser Lys Ala Lys Arg Ser Arg His His
                                       Page 11
```

```
1
                  5
                                       10
                                                            15
 <210> 45
 <211>
        16
 <212>
        PRT
 <213>
        Artificial Sequence
 <220>
 <223>
       Synthetic peptide
 <400> 45
 Ser Arg Arg His His Cys Ala Ser Lys Ala Lys Arg Ser Arg His His 10 15
 <210>
        46
 <211>
        16
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223>
       Synthetic peptide
 <400> 46
ser Arg Arg His His Cys Arg Ala Lys Ala Lys Arg Ser Arg His His
<210> 47
<211> 16
<212> PRT
<213> Artificial Sequence
<220>
<223>
       Synthetic peptide
<400> 47
Ser Arg Arg His His Cys Arg Ser Ala Ala Lys Arg Ser Arg His His 10 15
<210>
       48
<211> 16
<212> PRT
<213> Artificial Sequence
<220>
<223>
       Synthetic peptide
<400>
Ser Arg Arg His His Cys Arg Ser Lys Ala Ala Arg Ser Arg His His
<210>
      49
<211> 16
<212> PRT
<213> Artificial Sequence
```

```
<220>
 <223>
        Synthetic peptide
 <400>
 Ser Arg Arg His His Cys Arg Ser Lys Ala Lys Ala Ser Arg His His
 <210>
       50
 <211>
       16
 <212>
       PRT
 <213> Artificial Sequence
 <220>
 <223>
       Synthetic peptide
 <400> 50
Ser Arg Arg His His Cys Arg Ser Lys Ala Lys Arg Ala Arg His His 10 15
 <210> 51
 <211> 16
 <212> PRT
<213>
       Artificial Sequence
<220>
<223> Synthetic peptide
<400>
Ser Arg Arg His His Cys Arg Ser Lys Ala Lys Arg Ser Ala His His 10 \hspace{1.5cm} 15
<210> 52
<211> 13
<212> PRT
<213> Artificial Sequence
<220>
<223>
       Synthetic peptide
<400> 52
<210> 53
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223>
       Synthetic peptide
<400> 53
Gln Glu Leu Ser Glu Gln Ile His Arg Leu Leu Leu Gln Pro Val
                                       Page 13
```

15

```
5
```

```
<210> 54
<211> 4
. <212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide

<220>
<221> misc_feature
<223> Xaa = R, H or K

<220>
<221> misc_feature
<220>
<221> Xaa = R, H or K

<20>
<21> misc_feature
<220>
<21> 54
```

Xaa Xaa Xaa Xaa 1